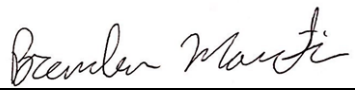
SITE ASSESSMENT REPORT
WILSON SHIRT FACTORY REMOVAL ASSESSMENT
SOUTH BEND, INDIANA

Revision 0

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 5
Chicago, Illinois 60604

TDD NO.:	S05-0001-1903-300	
EPA OSC:	Thomas Mendez	
SITE NAME:	Wilson Shirt Factory – RS	
SITE LOCATION:	South Bend, St. Joseph County, Indiana	
REPORT PREPARER:	Brendan Martin	
SIGNATURE/DATE		7/25/2019
QC REVIEWER:	Joseph Gawarzewski	
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EPA OSC APPROVAL SIGNATURE/DATE:		
DOCUMENT TRACKING NO.:	2858	

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1.0 INTRODUCTION

Under Technical Direction Document (TDD) S05-0001-1903-300, EPA Region 5 tasked the Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) to perform a site assessment at the Wilson Shirt Factory site (the site) located in South Bend, St. Joseph County, Indiana (Appendix A, Figures 1 and 2). EPA requested that Tetra Tech START (1) assess the presence of asbestos-containing materials (ACM) in on-site debris piles through sample collection and (2) determine whether airborne asbestos fibers posed a potential threat to nearby residents and on-site workers through collection of asbestos air samples at the perimeter of the site and on site within the breathing zone.

2.0 SITE BACKGROUND

The following sections specify the location of the site, describe the site, and recount historical investigations pertaining to the site.

2.1 SITE LOCATION AND DESCRIPTION

The site is at 1008 West Sample Street in South Bend, St. Joseph County, Indiana, and lies in the northern part of Section 14, Township 37 North, Range 2 East, of the South Bend West, Indiana topographic quadrangle (Appendix A, Figure 1). The site is approximately 725 feet above mean sea level and consists of three parcels, identified as parcel numbers 018-8021-0842, 018-8021-084203, and 018-8021-084204. Geographic coordinates at the site are latitude 41.664395 degrees north and longitude -86.264286 degrees west (as measured at the approximate center of the site).

The approximately 2.3-acre site is within a mixed commercial and industrial area. The site is bounded north by West Sample Street, followed by commercial and industrial properties; east by a warehouse, followed by Catalpa Street; south by a commercial property, followed by additional commercial and industrial properties; and west by an abandoned commercial property, followed by a mixture of residential, commercial, and industrial properties (Appendix A, Figure 2).

The Wilson Brothers Shirt Company opened the South Bend factory in 1883, which produced shirts and clothing garments until the factory closed in 1975. The factory originally consisted of six main structures that connected along the perimeter of the area, forming a central courtyard.

In 2007, Bill Anksorus bought the property, and in 2015, partnered with Rive Kynnap to salvage bricks and wood on site.

Since 2015, four of the six structures have been deconstructed, with the debris piles remaining on site. The remaining two main structures have begun to collapse.

2.2 HISTORICAL INVESTIGATIONS

On February 20, 2017, Rive Kynnap contracted Parkland Environmental Group, Inc., (Parkland) to conduct a limited asbestos inspection at the site. The inspection occurred at the eastern of the two remaining structures and identified the following suspect ACM: drywall, plaster, ceiling tiles, fibrous ceiling panels, floor tiles, transite panels, pyro block, window glazing, and aircell pipe insulation.

From April 17 through 20, 2017, based on the findings cited above, Parkland conducted limited asbestos abatement of the eastern structure and debris piles immediately surrounding the structure, involving aircell pipe insulation and transite panels.

On April 19, 2017, Indiana Department of Environmental Management (IDEM) performed bulk asbestos sampling at the site focusing on visible, suspect ACM in the debris piles—namely pipe wrap insulation and transite materials among the demolition debris. Nine suspect ACMs were sampled and submitted to Micro Air, Inc., in Indianapolis, Indiana, for analysis via Polarized Light Microscopy (PLM) according to EPA Method 600-M4-82-020 and EPA Method 600-R-93-116 (*Method for the Determination of Asbestos in Bulk Material Building Materials*). PLM is an analytical method recommended by EPA for identification of asbestos based on analytical focus on unique optical properties of mineral forms in the samples. All nine samples were found to contain concentrations of chrysotile asbestos ranging from <1 to 60 percent.

On May 15, 2017, the second phase of asbestos abatement to address remaining ACM on site was cancelled. Therefore, much of the unabated ACM identified by IDEM in the demolition debris remained subject to weathering.

3.0 FIELD INVESTIGATION

Tetra Tech START's site assessment included a site reconnaissance, structural assessment, and collection of bulk suspect ACM samples and perimeter air samples.

3.1 SITE OBSERVATIONS

On April 17, 2019, Tetra Tech START visually inspected and conducted a structural assessment of site buildings to determine safe practices for personnel performing site assessment activities (see the photolog in Appendix B). The property was surrounded by a security fence, but a damaged gate allowed access to the site. A section of the fence had been installed by Victor Cao, the property owner directly east of the site. During the inspection, Mr. Cao stated that trespassing had occurred frequently during the warmer months, as evidenced by observations of graffiti and trash at the site.

A structural assessment by a Tetra Tech START structural engineer found the two original on-site factory buildings and a smaller annex unsafe to enter. The structural integrity of these buildings appeared to have diminished, with critical structures (load bearing walls, columns, and support beams) having failed at multiple locations throughout these buildings. Given these conditions and vulnerability of remaining site structures to collapse, Tetra Tech START strongly recommended that personnel conducting sampling and removal activities on site not enter any of the remaining site structures. Additional information concerning structural integrity of the site buildings and recommendations is in the Wilson Shirt Factory Structural Findings Report (Tetra Tech 2019a).

3.2 SAMPLING ACTIVITIES

On May 29, 2019, Tetra Tech START performed a limited asbestos inspection of the demolition debris, and conducted bulk asbestos and perimeter air sampling at the site (see the photolog in Appendix B and field notes in Table C-1 in Appendix C). Collections of bulk asbestos and air samples accorded with the approved Wilson Shirt Factory Sampling and Analysis Plan (Tetra Tech 2019b).

3.2.1 Asbestos Survey Activities

Tetra Tech START conducted a limited asbestos inspection of the on-site demolition debris piles, observing the following suspect ACM therein: roofing materials, transite fire doors, transite siding, floor tile and associated mastic, floor debris, and drywall. Tetra Tech START also collected 15 asbestos bulk samples to confirm presence of previously identified ACM in those demolition debris piles. Sample locations are shown on Figure 3 in Appendix A. The samples were placed into plastic bags in accordance with Tetra Tech's Standard Operating Procedure (SOP) 019-7. Each sample was labeled, packaged, and shipped to EMSL Analytical, Inc., (EMSL) at 200 Route 130 North, in Cinnaminson, New Jersey. EMSL

is a National Voluntary Laboratory Accreditation Program (NVLAP)-accredited laboratory (see Attachment 1). The samples were analyzed via PLM according to EPA Method 600-R-93-116.

3.2.2 Perimeter and Personal Air Sampling

Tetra Tech START conducted perimeter air sampling at three stationary locations during site assessment activities to assess potential for exposure of adjacent businesses to fugitive asbestos fibers (see Figure 3 in Appendix A). Those sampling locations were at the eastern, southern, and western perimeters of the site. Sample collection proceeded by use of high-volume air sampling pumps fitted with 25-millimeter (mm), 0.8-micrometer (µm) mixed cellulose ester (MCE) filter cassettes. Air samples were collected approximately 4 to 5 feet above the ground surface to represent exposures in the breathing zone. Filter cassettes were placed at an approximate 45-degree downward position with the inlet caps of the filter cassettes removed (open-faced) during sampling. Flow rates of the fully assembled air sampling trains were calibrated and recorded before and after sample collection by use of a Mesa Labs Defender 510 Drycal rotameter.

During site assessment activities, to determine potential exposure to asbestos fibers by personnel who possibly would work on site, Tetra Tech START also collected a personal air sample using a low-volume air sampling pump fitted with 25 mm, 0.8 µm MCE filter cassette. The filter cassette was placed in the breathing zone of the individual, with the inlet cap of the filter cassette removed (open-faced) during sampling. Flow rate of the fully assembled air sampling train was calibrated and recorded before and after sample collection by use of the Mesa Labs Defender 510 Drycal rotameter.

Air sample cassettes were capped and placed into plastic bags in accordance with Tetra Tech's SOP 019-7. Each sample was labeled, packaged, and shipped to EMSL for analysis of the air samples via phase contrast microscopy (PCM) according to National Institute of Occupational Safety and Health (NIOSH) Method 7400, *Asbestos and Other Fibers* (in conformance to the guidelines established in 29 *Code of Federal Regulations* [CFR] 1926.1101). EMSL is an American Industrial Hygiene Association (AIHA)-accredited laboratory for PCM analysis.

3.2.3 Meteorological Data

Current meteorological data were obtained from the National Weather Service (NWS) website at the South Bend Regional Airport (KSBN) Station. Conditions were as follows during the sampling event on May 29, 2019:

Temperature: 66 to 78 degrees Fahrenheit (°F)

Relative humidity: 69% (average)

Wind direction: West

Wind speed: 5.8 miles per hour (mph) (average), 13 mph (highest)

Weather conditions: Partly cloudy

Note: Heavy rain (0.53 inch total) had been recorded on the day prior to sampling (May 28, 2019).

4.0 ANALYTICAL RESULTS

The following sections convey analytical results from asbestos bulk samples and perimeter and personal air samples.

4.1 ASBESTOS BULK SAMPLING RESULTS

Table 1 lists laboratory analytical results from bulk samples found to contain asbestos at greater than 1 percent.

TABLE 1: BULK ASBESTOS ANALYTICAL RESULTS

MATERIAL DESCRIPTION	ASBESTOS PERCENTAGE AND TYPE
Transite Fire Door	20 to 25 percent chrysotile
Transite Siding	15 to 20 percent chrysotile
Floor Tile and Associated Mastic	3 to 8 percent chrysotile

Laboratory analytical results from all asbestos bulk samples are listed in Table D-1 Appendix D and the laboratory analytical report from EMSL (received on June 7, 2019) is in Attachment 2.

A visual inspection of the bulk materials identified as ACM indicated that those materials had been rendered to a friable state during building demolition and as a result of weathering during exposure to the elements. A friable asbestos material contains more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure, such as spray-applied fireproofing on structural steel members, spray-applied acoustical ceiling materials, or damaged thermal system insulation; these are considered Regulated Asbestos Containing Materials (RACM). Removal and disposal of RACM by an Asbestos Hazard Emergency Response Act (AHERA) certified asbestos inspector is necessary. Because the identified ACM is considered RACM, and is mixed throughout the demolition debris, the demolition debris is considered asbestos-contaminated material, and removal and disposal of it according to Federal EPA guidelines is required.

4.2 PERIMETER AND PERSONAL AIR SAMPLING RESULTS

Laboratory analytical results from the perimeter air samples (received from EMSL on June 7, 2019) ranged from less than the limit of detection to 0.003 fibers per cubic centimeter (f/cc). Table D-2 in Appendix D lists results from the perimeter air samples, and the laboratory analytical report from EMSL is in Attachment 2. The two perimeter air samples in which fiber detections occurred are as follows:

- WSF-S01-20190529 was an ambient air sample collected at the south perimeter air station and found to contain 0.003 fibers/cc.

- WSF-S03-20190529 was an ambient air sample collected at the west perimeter air station and found to contain 0.003 fibers/cc.

The analytical result from the personal air sample (WSF-BM01-20190529) also was received from EMSL on June 7, 2019. It indicated asbestos concentration at 0.014 f/cc (see Table D-2 in Appendix D and the laboratory analytical report in Attachment 2), which did not exceed the Occupational Safety and Health Administration (OSHA) exposure benchmark of 0.1 f/cc.

5.0 POTENTIAL THREATS TO HUMAN HEALTH

Factors to consider in determining appropriateness of a removal action at a site are delineated in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) at 40 CFR Part 300.415(b)(2). Sample results indicate presence of friable ACM at the site at concentrations that may present a health risk to nearby residents and the community, based on criteria that include, but are not limited to, the following:

A. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants

During the site assessment on May 29, 2019, Tetra Tech documented presence at the site of friable ACM mixed with the demolition debris distributed throughout the site. Commercial businesses are next to and near the site, and evidence of trespassing and vandalism was apparent. Nearby human receptors (including nearby commercial occupants and trespassers) could be exposed to hazardous substances, pollutants, or contaminants migrating off site.

The Agency for Toxic Substances and Disease Registry (ATSDR) has studied toxicological effects of asbestos, and has conveyed the following information regarding that:

> Significant exposure to any type of asbestos will increase the risk of lung cancer, mesothelioma and nonmalignant lung and pleural disorders, including asbestosis, pleural plaques, pleural thickening, and pleural effusion. (ATSDR 2008).

B. Weather conditions that may cause release or migration of hazardous substances or pollutants or contaminants

Weather conditions could continue to naturally degrade friable ACM and induce migration of asbestos fibers off site to the surrounding community.

REFERENCES

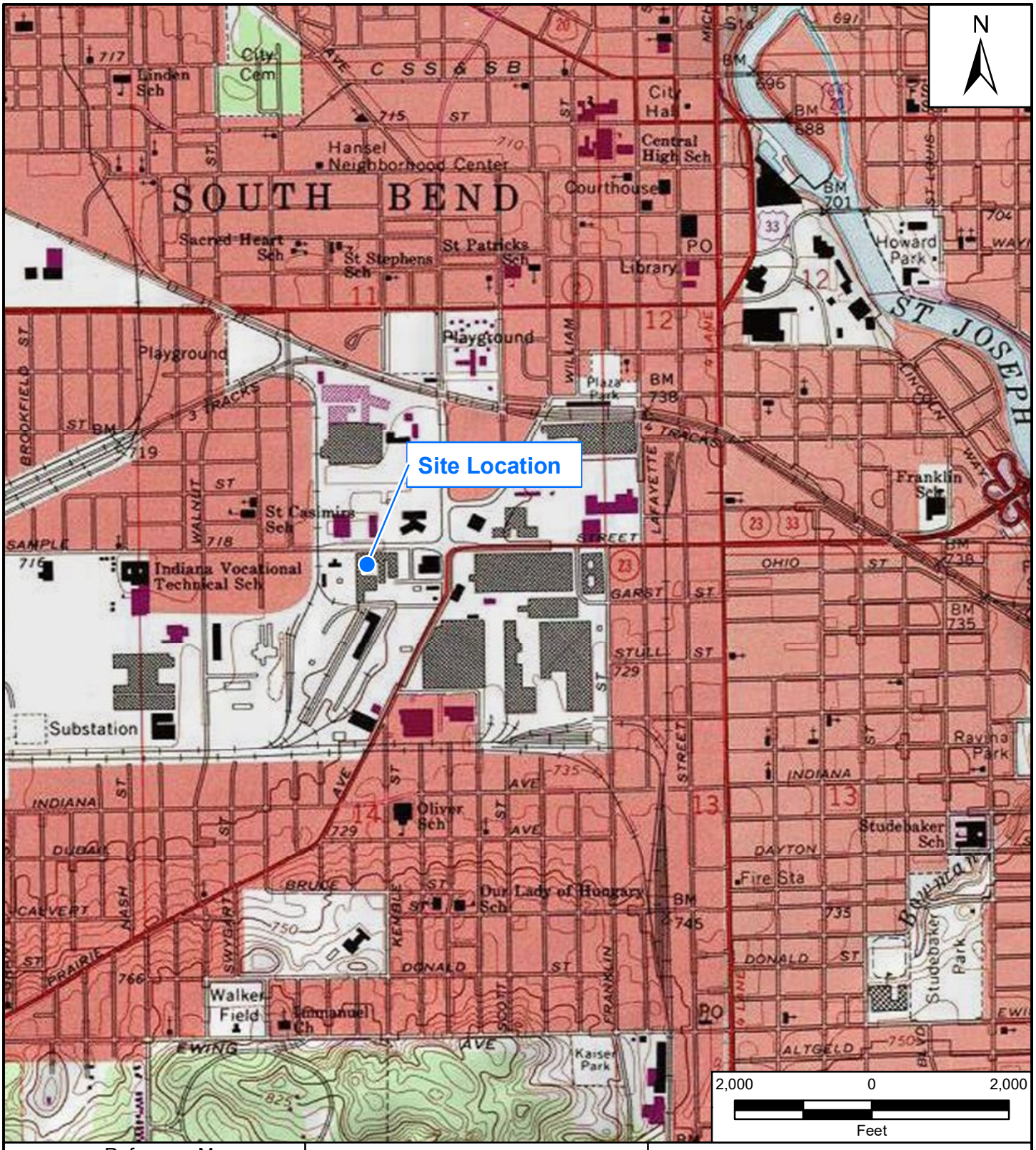
Agency for Toxic Substances and Disease Registry (ATSDR). 2001. Toxicological Profile for Asbestos. September.

Tetra Tech, Inc. (Tetra Tech). 2019a. Wilson Shirt Factory Structural Findings Report. May 2.

Tetra Tech. 2019b. Sampling and Analysis Plan for the Wilson Shirt Factory Site. May 17.

APPENDIX A

Figures



Reference Map

Source: USGS 7.5-Minute Quadrangle Map: South Bend West

Wilson Shirt Factory Site
South Bend, St. Joseph County, Indiana

Figure 1

Site Location Map

TETRA TECH

Prepared For: USEPA	Prepared By: Tetra Tech, Inc.

File Path: G:\G\G9026-START IV\Indiana\Wilson Shirt Factory\mxd\Figure 1 - Site Location.mxd

Date Saved: 4/24/2019

EPA Contract No.: EP-S5-13-01 TDD No.: S05-0001-1903-300

Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary Sphere
Datum:WGS 1984 Units: Meter

Reference Map

Legend

Site Boundary

Source: ESRI DigitalGlobe Aerial; September 2017

Wilson Shirt Factory Site
South Bend, St. Joseph County, Indiana

Figure 2

Site Layout Map

TETRA TECH

Prepared For: USEPA	Prepared By: Tetra Tech, Inc.

File Path: G:\G\G9026-START IV\Indiana\Wilson Shirt Factory\mxd\Figure 2 - Site Layout.mxd

Date Saved: 4/25/2019

EPA Contract No.: EP-S5-13-01 TDD No.: S05-0001-1903-300

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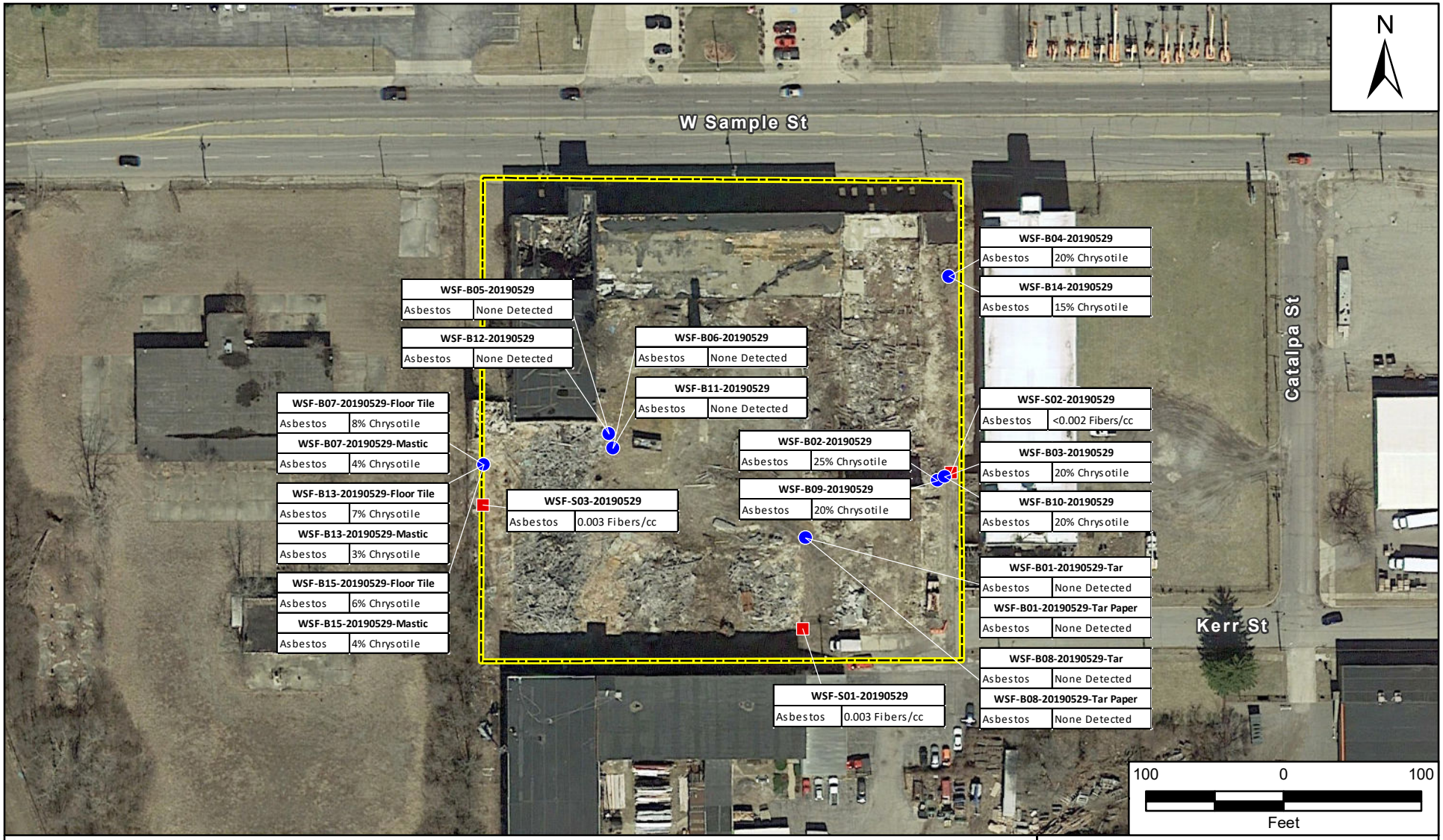
Projection: Mercator Auxiliary Sphere
Datum:WGS 1984 Units: Meter



Legend

- Bulk Asbestos Sample Location
- Perimeter Asbestos High-flow Air Station
- Site Boundary

Notes

WSF: Wilson Shirt Factory
B: Bulk asbestos sample
S: Air asbestos sample
cc: Cubic centimeter
%: Percent

Wilson Shirt Factory Site
South Bend, St. Joseph County, Indiana

Figure 3

Asbestos Sample Results

TETRA TECH

Prepared For: USEPA	Prepared By: Tetra Tech, Inc.

File Path: G:\G\G9026-START IV\Indiana\Wilson Shirt Factory\mxd\2019-06\Fig4-AirSampleResults.mxd

Date Saved: 7/9/2019

EPA Contract No.: EP-S5-13-01

TDD No.: S05-0001-1903-300

Coordinate System: NAD 1983 StatePlane Indiana East FIPS 1301 Feet
Projection: Transverse Mercator
Datum:North American 1983 Units: Foot US

APPENDIX B
Photographic Log

Photographic Documentation

Client: EPA Region 5
Site Name: Wilson Shirt Factory – Removal Assessment
Location: South Bend, St. Joseph County, Indiana

Prepared by: Brendan Martin
TDD Number: 0001-1903-300
Dates: April 17 and May 29, 2019

Photograph No. 1 **Date:** April 17, 2019 **Description:** Site overview photo from southern perimeter facing north. Photo includes site entrance, smoke stack, debris piles, and remaining west and north structures.	
Photograph No. 2 **Date:** April 17, 2019 **Description:** Site overview photo from southeastern area facing west. Photo includes debris piles on southern portion of site. The structure of the left-hand side of the photo is the neighboring property, Werntz Supply.	

Photographic Documentation

Client: EPA Region 5
Site Name: Wilson Shirt Factory – Removal Assessment
Location: South Bend, St. Joseph County, Indiana

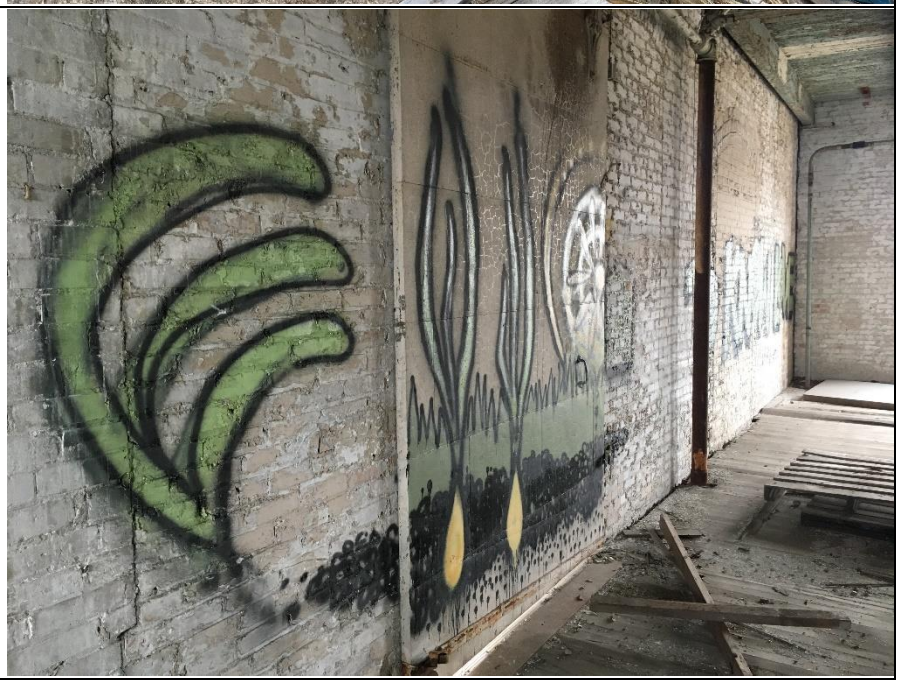
Prepared by: Brendan Martin
TDD Number: 0001-1903-300
Dates: April 17 and May 29, 2019

Photograph No. 3 **Date:** April 17, 2019 **Description:** Site overview photo from eastern perimeter facing southwest. Photo includes remnant walls and debris piles from demolished eastern structure.	
Photograph No. 4 **Date:** April 17, 2019 **Description:** Site overview photo from northeastern perimeter facing west. Photo includes northern structure and West Sample Street (northern site perimeter).	

Photographic Documentation

Client: EPA Region 5
Site Name: Wilson Shirt Factory – Removal Assessment
Location: South Bend, St. Joseph County, Indiana

Prepared by: Brendan Martin
TDD Number: 0001-1903-300
Dates: April 17 and May 29, 2019

Photograph No. 5 **Date:** April 17, 2019 **Description:** Evidence of trespassing on-site, graffiti on exterior of northern structure.	
Photograph No. 6 **Date:** April 17, 2019 **Description:** Evidence of trespassing on-site, graffiti on interior of north structure.	

Photographic Documentation

Client: EPA Region 5
Site Name: Wilson Shirt Factory – Removal Assessment
Location: South Bend, St. Joseph County, Indiana

Prepared by: Brendan Martin
TDD Number: 0001-1903-300
Dates: April 17 and May 29, 2019

Photograph No. 7 **Date:** April 17, 2019 **Description:** Evidence of trespassing on-site, graffiti on interior of west structure.	
Photograph No. 8 **Date:** April 17, 2019 **Description:** Site hazard, four compressed oxygen gas cylinders located in northern structure. Oxygen volume unknown.	

Photographic Documentation

Client: EPA Region 5
Site Name: Wilson Shirt Factory – Removal Assessment
Location: South Bend, St. Joseph County, Indiana

Prepared by: Brendan Martin
TDD Number: 0001-1903-300
Dates: April 17 and May 29, 2019

Photograph No. 9 **Date:** April 17, 2019 **Description:** Site hazard, underground area with failing roof, located near stack in central area of site.	
Photograph No. 10 **Date:** May 29, 2019 **Description:** Bulk asbestos samples WSF-B01-20190529 and WSF-B08-20190529. Black roofing material, tar with paper backing, located in debris pile in southeast area of site.	

Photographic Documentation

Client: EPA Region 5
Site Name: Wilson Shirt Factory – Removal Assessment
Location: South Bend, St. Joseph County, Indiana

Prepared by: Brendan Martin
TDD Number: 0001-1903-300
Dates: April 17 and May 29, 2019

Photograph No. 11 **Date:** May 29, 2019 **Description:** Bulk asbestos samples WSF-B02-20190529 and WSF-B09-20190529. Grey transite firedoor located in debris pile on eastern side of site.	
Photograph No. 12 **Date:** May 29, 2019 **Description:** Bulk asbestos samples WSF-B03-20190529 and WSF-B10-20190529. Grey and white transite siding located in debris pile on eastern side of site.	

Photographic Documentation

Client: EPA Region 5
Site Name: Wilson Shirt Factory – Removal Assessment
Location: South Bend, St. Joseph County, Indiana

Prepared by: Brendan Martin
TDD Number: 0001-1903-300
Dates: April 17 and May 29, 2019

Photograph No. 13 **Date:** May 29, 2019 **Description:** Bulk asbestos samples WSF-B04-20190529 and WSF-B14-20190529. Grey and green transite siding located in debris pile on northeastern corner of site.	
Photograph No. 14 **Date:** May 29, 2019 **Description:** Bulk asbestos samples WSF-B05-20190529 and WSF-B12-20190529. Red sheet flooring located near southeastern corner of west structure.	

Photographic Documentation

Client: EPA Region 5
Site Name: Wilson Shirt Factory – Removal Assessment
Location: South Bend, St. Joseph County, Indiana

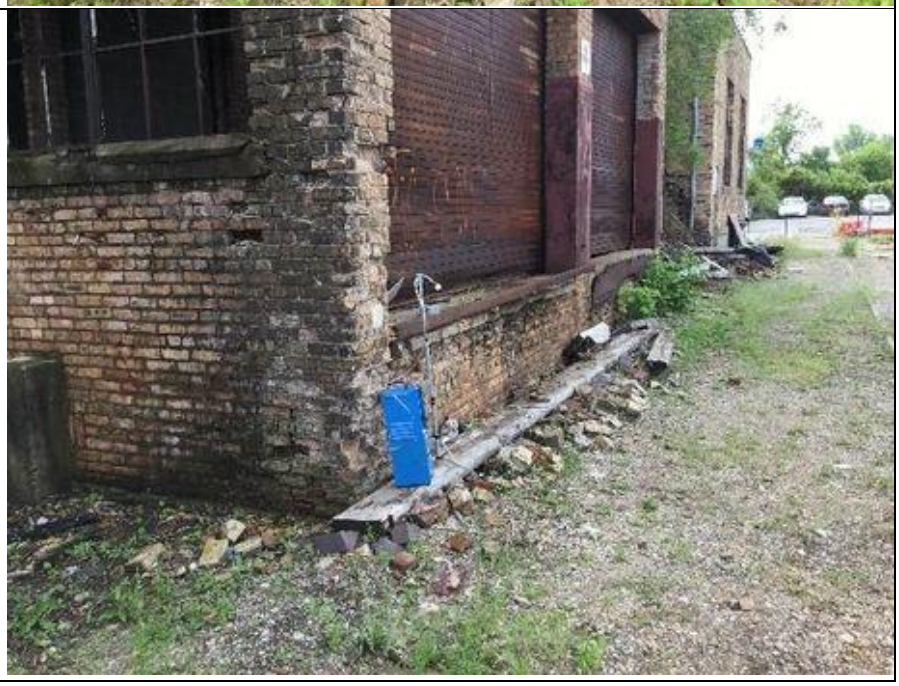
Prepared by: Brendan Martin
TDD Number: 0001-1903-300
Dates: April 17 and May 29, 2019

Photograph No. 15 **Date:** May 29, 2019 **Description:** Bulk asbestos samples WSF-B06-20190529 and WSF-B11-20190529. White drywall located on southeast corner of west structure.	
Photograph No. 16 **Date:** May 29, 2019 **Description:** Bulk asbestos samples WSF-B07-20190529, WSF-B13-20190529, and WSF-B15-20190529. Red floor tile and black mastic located on debris pile directly south of western structure.	

Photographic Documentation

Client: EPA Region 5
Site Name: Wilson Shirt Factory – Removal Assessment
Location: South Bend, St. Joseph County, Indiana

Prepared by: Brendan Martin
TDD Number: 0001-1903-300
Dates: April 17 and May 29, 2019

Photograph No. 17 **Date:** May 29, 2019 **Description:** Southern perimeter high-flow air station, asbestos air sample WSF-S01-190529. Sample collected using an AirCon2 pump.	
Photograph No. 18 **Date:** May 29, 2019 **Description:** Eastern perimeter high-flow air station, asbestos air sample WSF-S02-190529. Sample collected using an AirCon2 pump.	

Photographic Documentation

Client: EPA Region 5
Site Name: Wilson Shirt Factory – Removal Assessment
Location: South Bend, St. Joseph County, Indiana

Prepared by: Brendan Martin
TDD Number: 0001-1903-300
Dates: April 17 and May 29, 2019

Photograph No. 19 **Date:** May 29, 2019 **Description:** Western perimeter high-flow air station, asbestos air sample WSF-S03-190529. Sample collected using an AirCon2 pump.	

APPENDIX C

Field Notes

Scanned Log Book (2 Pages)

Table C-1	Bulk Asbestos Sample Log
Table C-2	Air Asbestos Sample Log

INCH

MADE IN TACOMA — SINCE 1916 —
Rite in the Rain
— DEFYING MOTHER NATURE —

Name

START FIELD LOGBOOK

Logbook Tracking Number CH301
Site Name Wilson Shirt Factory
Issue to Brendan Martin
Date Issued 4/9/19
FDD # 0001-1903-300

MADE IN USA · RITE GREEN · Archival

RiteintheRain.com

CONTENTS

PAGE	REFERENCE	DATE

April 17th 2019

0630 Left home for travel to site

0940 Arrived at site meeting spot, parking lot directly to the East of the Wilson Shirt Factory site. Moussa Sissoko (TetraTech engineer) had already arrived at meeting spot.

0945 Weather conditions: 53° and overcast, 0-10 mph winds

0950 Connor Beattie (TetraTech) and Rob Kondreck (EPA) arrived at meeting site

1000 Conducted health and safety meeting

1010 Started walking around perimeter of site

1020 Met with owner of neighboring (victor) building, he offered assistance, noted that people have been trespassing within the Wilson Shirt Factory site.

1030 Suspect ACM identified in debris piles, roofing material,

tile, insulation. Also graffiti present on site.

1100 Rick Reynolds and Adrian (IDEM) arrived on site.

1200 Toured neighboring building with Rob and IDEM.

1210 Channel 57 news crew is near site, flying drone over neighboring buildings.

1220 IDEM left site, Tetra Tech and Rob (EPA) walked on street-side of building.

1240 Tetra Tech (Brenden, Connor, and Marissa) left site. Rob remained in parking lot of neighboring building.

Brenden Martin

0935 START Brenden Martin arrived on site. Weather: partly cloudy, 62°F, winds: west at 5-10 mph.

0945 OSC Tom Mendez arrived on site.

1000 START Andre B arrived on site, conducted health and safety meeting.

1010 IDEM Adriane L, Becki, and Allen arrived on site. IDEM, OSC and START conducted on site walk.

1100 IDEM left site, Victor neighbor to the East stopped by to discuss site and our investigation.

1110 START and EPA started setting up perimeter air stations, personal sampling, and followed by bulk asbestos sampling. Sample times and info recorded in survey forms.

1400 Sampling finished, START and EPA off site by 1415.

Brenden Martin 05/29/19

TABLE C-1

WILSON SHIRT FACTORY – ASBESTOS BULK SAMPLE FIELD LOG (MAY 29, 2019)

Sample ID	Sample Time	Material	Primary Color	Secondary Color	Latitude	Longitude	Notes
WSF-B01-20190529	12:07	Roofing	Black	NA	41.66424230	-86.26398405	Tar with paper backing in debris pile in southeast area of site
WSF-B02-20190529	12:14	Transite fire door	Grey	NA	41.66435826	-86.26363432	In debris pile on east side of site
WSF-B03-20190529	12:22	Transite siding	Grey	White	41.66436595	-86.26361655	In debris pile on east side of site
WSF-B04-20190529	12:25	Transite siding	Grey	Green	41.66476593	-86.26360871	In debris pile at northeast corner of site
WSF-B05-20190529	12:31	Floor debris	Red	NA	41.66444756	-86.26450855	Red sheet flooring near southeast corner of west structure
WSF-B06-20190529	12:34	Drywall	White	NA	41.66441856	-86.26449826	Drywall on southeast corner of west structure
WSF-B07-20190529	12:41	Floor tile	Red	Black	41.66438331	-86.26484169	Floor tile and mastic on debris pile directly south of west structure
WSF-B08-20190529	13:17	Roofing	Black	NA	41.66424230	-86.26398405	Tar with paper backing in debris pile in southeast area of site
WSF-B09-20190529	13:19	Transite fire door	Grey	NA	41.66435826	-86.26363432	In debris pile on east side of site
WSF-B10-20190529	13:21	Transite siding	Grey	White	41.66436595	-86.26361655	In debris pile on east side of site
WSF-B11-20190529	13:24	Drywall	White	NA	41.66441856	-86.26449826	Drywall on southeast corner of west structure
WSF-B12-20190529	13:26	Floor debris	Red	NA	41.66444756	-86.26450855	Red sheet flooring near southeast corner of west structure
WSF-B13-20190529	13:27	Floor tile	Red	Black	41.66438331	-86.26484169	Floor tile and mastic on debris pile directly south of west structure
WSF-B14-20190529	13:29	Transite siding	Grey	Green	41.66476593	-86.26360871	In debris pile at northeast corner of site
WSF-B15-20190529	13:31	Floor tile	Red	Black	41.66438331	-86.26484169	Floor tile and mastic on debris pile directly south of west structure
Notes: B = Bulk asbestos sample NA = Not applicable WSF = Wilson Shirt Factory							

TABLE C-2

WILSON SHIRT FACTORY – ASBESTOS AIR SAMPLE FIELD LOG (MAY 29, 2019)

Sample ID	Sample Type	Pump	Sample Height (feet)	Latitude	Longitude	Notes
WSF-S01-190529	Field Sample	AirCon2	3-5	41.66406132	-86.26399081	South perimeter air station
WSF-S02-190529	Field Sample	AirCon2	3-5	41.66437504	-86.26360013	East perimeter air station
WSF-S03-190529	Field Sample	AirCon2	3-5	41.66430354	-86.26484306	West perimeter air station
WSF-S04-190529	Media Blank	NA	NA	NA	NA	Field blank
WSF-S05-190529	Media Blank	NA	NA	NA	NA	Lot blank
WSF-BM01-190529	Field Sample	GilAir5	3-5	NA	NA	Personal sample collected by Brendan Martin during bulk asbestos sampling

TABLE C-2

WILSON SHIRT FACTORY – ASBESTOS AIR SAMPLE FIELD LOG (MAY 29, 2019)

	Pre Cal (L/min)	Start Time	Post Cal (L/min)	Stop Time	Total Time (min)	Average Flow (L/min)	Total Volume (L)	Notes
WSF-S01-190529	10.171	11:20	10.251	13:40	140	10.21099	1429.54	South perimeter air station
WSF-S02-190529	10.036	11:28	10.34	13:43	135	10.188	1375.38	East perimeter air station
WSF-S03-190529	10.279	11:34	16.893	13:49	135	13.586	1834.11	West perimeter air station
WSF-S04-190529	NA	NA	NA	NA	NA	NA	NA	Field blank
WSF-S05-190529	NA	NA	NA	NA	NA	NA	NA	Lot blank
WSF-BM01-190529	2.54	11:55	2.54	13:35	100	2.54	254	Personal sample collected by Brendan Martin during bulk asbestos sampling

Notes:

All samples were collected in MCE Cassettes.

cc = Cubic centimeter

BM = Personal air sample for Brendan Martin

L = Liters

LOD = Limit of detection

mm^2 = Square millimeter

NA = Not applicable

S = Asbestos air sample

WSF = Wilson Shirt Factory

min = Minute

APPENDIX D
Analytical Results

TABLE D-1

WILSON SHIRT FACTORY – ASBESTOS BULK SAMPLE RESULTS (MAY 29, 2019)

Sample ID	Result	Material	Appearance	Type
WSF-B01-20190529	Non-Detect	Roofing tar	Black	NA
WSF-B01-20190529	Non-Detect	Roofing tar paper	Black	NA
WSF-B02-20190529	25%	Transite fire door	Grey	Chrysotile
WSF-B03-20190529	20%	Transite siding	Grey/white	Chrysotile
WSF-B04-20190529	20%	Transite siding	Grey	Chrysotile
WSF-B05-20190529	Non-Detect	Floor debris	Brown	NA
WSF-B06-20190529	Non-Detect	Drywall	Brown/white	NA
WSF-B07-20190529	8%	Floor tile	Red	Chrysotile
WSF-B07-20190529	4%	Mastic	Black	Chrysotile
WSF-B08-20190529	Non-Detect	Roofing tar	Black	NA
WSF-B08-20190529	Non-Detect	Roofing tar paper	Black	NA
WSF-B09-20190529	20%	Transite fire door	Grey	Chrysotile
WSF-B10-20190529	20%	Transite siding	Grey	Chrysotile
WSF-B11-20190529	Non-Detect	Drywall	Brown/white	NA
WSF-B12-20190529	Non-Detect	Floor debris	Brown	NA
WSF-B13-20190529	7%	Floor tile	Red	Chrysotile
WSF-B13-20190529	3%	Mastic	Black	Chrysotile
WSF-B14-20190529	15%	Transite siding	Grey	Chrysotile
WSF-B15-20190529	6%	Floor tile	Red	Chrysotile
WSF-B15-20190529	4%	Mastic	Black	Chrysotile
Notes:				
B = Bulk asbestos sample				
NA = Not applicable				
WSF = Wilson Shirt Factory				

TABLE D-2

WILSON SHIRT FACTORY – ASBESTOS AIR SAMPLE RESULTS (MAY 29, 2019)

Sample ID	Total Volume (L)	Fibers	Fields	LOD (Fibers/cc)	Fibers/mm²	Fibers/cc	Notes
WSF-S01-20190529	1429.54	9.5	100	0.002	12.1	0.003	
WSF-S02-20190529	1375.38	<5.5	100	0.002	<7.01	<0.002	
WSF-S03-20190529	1834.11	12.5	100	0.001	15.9	0.003	
WSF-S04-20190529		<5.5	100		<7.01		Field Blank
WSF-S05-20190529		<5.5	100		<7.01		Field Blank
WSF-BM01-20190529	254	7.5	100	0.011	9.55	0.014	

Notes:

cc = Cubic centimeter

BM = Personal air sample for Brendan Martin

L = Liters

LOD = Limit of detection

mm^2 = Square millimeter

S = Asbestos air sample

WSF = Wilson Shirt Factory

ATTACHMENT 1

NVLAP Accreditation

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.

Cinnaminson, NJ

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2019-07-01 through 2020-06-30

Effective Dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Voluntary Laboratory Accreditation Program

National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Mr. Ben Ellis
Phone: 800-220-3675 Fax: 856-786-5973
Email: bellis@emsl.com
http://www.emsl.com

ASBESTOS FIBER ANALYSIS — NVLAP LAB CODE 101048-0

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

Effective 2019-07-01 through 2020-06-30

ATTACHMENT 2

Analytical Data Package

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	041914784
Customer ID:	TEHC25
Customer PO:	
Project ID:	

Attention:	Brendan Martin	**Phone:**	(312) 201-7700
	Tetra Tech, Inc.	**Fax:**	
	1 South Wacker Dr.	**Received Date:**	05/31/2019 11:50 AM
	Suite 3700	**Analysis Date:**	06/10/2019
	Chicago, IL 60606	**Collected Date:**	
Project:	USEPA / 05ZZ / 5-052919-173943-0002		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
WSF-B01-20190529-Tar *041914784-0001*	Roofing	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
WSF-B01-20190529-Tar Paper *041914784-0001A*	Roofing	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
WSF-B02-20190529 *041914784-0002*	Transite Fire Door	Gray Fibrous Homogeneous		75% Non-fibrous (Other)	25% Chrysotile
WSF-B03-20190529 *041914784-0003*	Transite Siding	Gray/White Fibrous Homogeneous		80% Non-fibrous (Other)	20% Chrysotile
WSF-B04-20190529 *041914784-0004*	Transite Siding	Gray Fibrous Homogeneous		80% Non-fibrous (Other)	20% Chrysotile
WSF-B05-20190529 *041914784-0005*	Floor Debris	Brown Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
WSF-B06-20190529 *041914784-0006*	Drywall	Brown/White Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
WSF-B07-20190529-Floor Tile *041914784-0007*	Floor Tile	Red Non-Fibrous Homogeneous		92% Non-fibrous (Other)	8% Chrysotile
WSF-B07-20190529-Mastic *041914784-0007A*	Mastic	Black Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
WSF-B08-20190529-Tar *041914784-0008*	Roofing	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
WSF-B08-20190529-Tar Paper *041914784-0008A*	Roofing	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
WSF-B09-20190529 *041914784-0009*	Transite Fire Door	Gray Fibrous Homogeneous		80% Non-fibrous (Other)	20% Chrysotile
WSF-B10-20190529 *041914784-0010*	Transite Siding	Gray Non-Fibrous Homogeneous		80% Non-fibrous (Other)	20% Chrysotile
WSF-B11-20190529 *041914784-0011*	Drywall	Brown/White Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
WSF-B12-20190529 *041914784-0012*	Floor Debris	Brown Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected

Initial report from: 06/10/2019 11:47:59

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	041914784
Customer ID:	TEHC25
Customer PO:	
Project ID:	

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
WSF-B13-20190529-Floor Tile *041914784-0013*	Floor Tile	Red Non-Fibrous Homogeneous		93% Non-fibrous (Other)	7% Chrysotile
WSF-B13-20190529-Mastic *041914784-0013A*	Mastic	Black Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
WSF-B14-20190529 *041914784-0014*	Transite Siding	Gray Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile
WSF-B15-20190529-Floor Tile *041914784-0015*	Floor Tile	Red Non-Fibrous Homogeneous		94% Non-fibrous (Other)	6% Chrysotile
WSF-B15-20190529-Mastic *041914784-0015A*	Mastic	Black Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile

Analyst(s)
Keishla Vazquez Caraballo (20)

Benjamin Ellis, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367, LA #04127

Initial report from: 06/10/2019 11:47:59

TEHC25
Brendan Martin

USEPA
DateShipped: 05/29/2019
CarrierName: FedEx
AirbillNo:

CHAIN OF CUSTODY RECORD
Site #: 05ZZ
Contact Name: Brendan Martin
Contact Phone: 913-548-2487

No: 5-052919-173943-0002
Lab: EMSL Analytical, Inc
Lab Address: 200 Route 130 North
Lab_City: Cinnaminson

041914784

Lab #	Sample #	Sample Date	Sample Time	Sub Location	Color 1	Color 2	Matrix	Analyses	Lab QC
	WSF-B01-20190529	05/29/2019	12:07	Roofing	Black	NA	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B02-20190529	05/29/2019	12:14	Transite firedoor	Gray	NA	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B03-20190529	05/29/2019	12:25	Transite siding	Gray	White	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B04-20190529	05/29/2019	12:22	Transite siding	Gray	Green	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B05-20190529	05/29/2019	12:31	Floor_Debris	Red	NA	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B06-20190529	05/29/2019	12:34	Drywall	White	NA	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B07-20190529	05/29/2019	12:41	Floor_Tile	Red	Black	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B08-20190529	05/29/2019	13:17	Roofing	Black	NA	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B09-20190529	05/29/2019	13:19	Transite fire door	Gray	NA	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B10-20190529	05/29/2019	13:21	Transite siding	Gray	White	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B11-20190529	05/29/2019	13:27	Drywall	White	NA	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B12-20190529	05/29/2019	13:26	Floor_Debris	Brown/Tan/Beige	NA	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B13-20190529	05/29/2019	13:31	Floor_Tile	Red	Black	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B14-20190529	05/29/2019	13:24	Transite siding	Gray	Green	Bulk	EPA600/R-93/116 PLM (Asbestos)	
	WSF-B15-20190529	05/29/2019	13:29	Floor_Tile	Red	Black	Bulk	EPA600/R-93/116 PLM (Asbestos)	

RECEIVED
EMSL
CINNAMINSON, N.J.
2019 MAY 30 P 12:14

Special Instructions: 7 Day TAT

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Brendan Martin Tetra Tech	05/29/19 1830	[signature]	5/30/19 1150	

15TT

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order: 041914782
Customer ID: TEHC25
Customer PO:
Project ID:

Attention: Brendan Martin
Tetra Tech, Inc.
1 South Wacker Dr.
Suite 3700
Chicago, IL 60606
Project: 05ZZ / USEPA / 5-052919-171109-0001

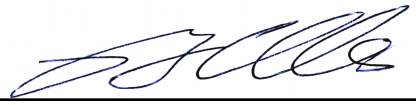
Phone: (312) 201-7700
Fax:
Received Date: 05/31/2019 11:50 AM
Analysis Date: 06/06/2019
Collected Date: 05/29/2019

Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 3, 4/29/2019

Sample	Location	Sample Date	Volume (L)	Fibers	Fields	LOD (fib/cc)	Fibers/mm²	Fibers/cc	Notes
WSF-BM01-20190529		05/29/2019	254	7.5	100	0.011	9.55	0.014	
041914782-0001									
WSF-S01-20190529		05/29/2019	1429.54	9.5	100	0.002	12.1	0.003	
041914782-0002									
WSF-S02-20190529		05/29/2019	1375.38	<5.5	100	0.002	<7.01	<0.002	
041914782-0003									
WSF-S03-20190529		05/29/2019	1834.11	12.5	100	0.001	15.9	0.003	
041914782-0004									
WSF-S04-20190529		05/29/2019		<5.5	100		<7.01		Field Blank
041914782-0005									
WSF-S05-20190529		05/29/2019		<5.5	100		<7.01		Field Blank
041914782-0006									

The results reported have been blank corrected as applicable.

Analyst(s):
Susan Muir PCM 6



Benjamin Ellis, Laboratory Manager
or other approved signatory

Limit of detection is 7 fibers/mm². Intra-laboratory Sr values: 5-20 fibers = 0.24, 21-50 fibers = 0.21, 51-100 fibers = 0.12. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.32. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted. Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC--IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367, LA #04127

Initial report from: 06/07/2019 01:09 AM

TEHC25
Brendan Martin

USEPA
DateShipped: 05/29/2019
CarrierName: FedEx
AirbillNo:

CHAIN OF CUSTODY RECORD

Site #: 05ZZ
Contact Name: Brendan Martin
Contact Phone: 913-548-2487

No: 5-052919-171109-0001

Lab: EMSL Analytical, Inc
Lab Address: 200 Route 130 North
Lab_City: Cinnaminson

04119147 82

Lab #	Sample #	Analyses	TAT	TAT Units	Matrix	Sample Date	Sample Time	Numb Cont	Volume	Vol Units	Avg_Flow	Flow_Units	Lab QC
	WSF-BM01-20190529	NIOSH_7400_PCM	7	Days	Air	05/29/2019	11:55	1	254	Liters	2.54	L/min	N
	WSF-S01-20190529	NIOSH_7400_PCM	7	Days	Air	05/29/2019	11:20	1	1429.5386	Liters	10.21099	L/min	N
	WSF-S02-20190529	NIOSH_7400_PCM	7	Days	Air	05/29/2019	11:28	1	1375.38	Liters	10.188	L/min	N
	WSF-S03-20190529	NIOSH_7400_PCM	7	Days	Air	05/29/2019	11:34	1	1834.11	Liters	13 586	L/min	N
	WSF-S04-20190529	NIOSH_7400_PCM	7	Days	Air	05/29/2019	11:40	1	0	Liters	0	L/min	N
	WSF-S05-20190529	NIOSH_7400_PCM	7	Days	Air	05/29/2019	14:28	1	0	Liters	0	L/min	N

RECEIVED
EMSL
CINNAMINSON, N.J.
2019 MAY 30 P 12:13

Special Instructions: 7 Day TAT

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Brendan Martin Tetra Tech	05/29/19 1830	[signature]	5/30/19 1150	

60